Quality Control

Work Ordo December-19-12				*94F	553*						Page 1
Item ID: Revision ID: Item Name:	D3903-1 ,			Accept	*N900	040	100)* s	etup Stai	171.	S1* S2*
Start Date: Required Date: Reference:	12/14/12 1/11/13	Start Qty: 24.00 Req'd Qty: 24.00	*24* *24*	:	Cust Item II Customer:) :					
Approvals:	Process Pl QC:	an:	Date:	Tooling: SPC (Y/N):	Da			R	tun Star Sto	, "I V I	R1* R2*
Sequence ID/ Work Center I	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool#	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Re	vision Nbr									
D3903	В										
100				0.00							
100 Hardinge Hardinge CNC Lati	ne Small	FOLIO REV DWG REV:		0.00 /G D3903,	St	13-01-7	7	24	Ø		
110		QC2- Inspect parts off m		0.00				<i>a.</i> /	.~		
*11 0 *		Memo		0.00	ll.a	01-27		24	Ø		

												DQA:	Da	te:	*
NCR:	⁄es	/ No				WORK ORDER NON-	COI	NFORM	MANCE / UP	PDATE					
												QA Closed:	Da	ite:	
Work Orde	or.					DISPOSITION				AGAINST	DE	PARTMENT	/PROCESS		
Work Orde	-1.		1 · u	,		Rework	٦		Skid-tube	Crosstube		l	Water Jet		Engineering
Part N	No.					Scrap	1]	Machining	Small Fab	-	Pro	d. Eng. Coor.	H	Quality
	-					Use-as-is	1		noforming	Finishing	-	4	e/Packaging	\square	Other
NCR N	۷o.					Work Order Update	1	ļ	Large Fab	Composite			Supplier		
Root						ption of work order update		Initial		ction		Sign &			
Cause		Date	Step	Qty		or Non-conformance	Ct	nief Eng	Desc	cription		Date	Verificatio	n	QC Inspector
Doc/Data								;	•						
Equip/Tooling										•					
Operator	Ш								:						
Material															
Setup														ļ	
Other															*
Process															
Supplier															
Training			İ												
Unapproved			l												
						F	AUI	T CATE	GORY						
Landi	ng G	ear				General		_	•			_			_
		Bending				Bend		Grain				Ovalized			Pressure/Forced
		Centre No	ot Concer	ntric to	o/s	BOM/Route		Hardwa	re			Over/Under	tolerance		Temperature/Cure
		Cracks				Broken/Damaged	Г	Inspecti	on Incomplete			Part Incorre	ct		Weld
	П	Crushed/0	Crimped.			Burrs		Instruct	ions Incomplete,	/Unclear	Г	Part Lost/M	issing		Wrong Stock Pulled
	П	Cuffs				Contamination		Mainte	nance		Γ	Part Moved			-

Mislabeled

Out of Calibration

Out of Sequence

Outside Dimensions

Misread

Offset

Positioned Wrong

Power Loss/Surge

Other

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Heat Treat

Inspection Strip in Tube

Torque Waves in Extrusion

Countersink

Cut Too Short

Drill Holes

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

December-19-12	2 1:52:19 PM	! 									
Item ID: Revision ID: Item Name:	D3903-1 Spacer			Accept	*N900	040	100)* s	etup Start Stop	14.	S1* S2*
Start Date:	12/14/12	Start Qty: 24.00 Req'd Qty: 24.00	*24	*	Cust Item II	D:					
Required Date: Reference:	1/11/13	Req u Qiy: 24.00	*24	*	Customer:						
Approvals:	Process Pla	n:	Date:	Tooling:	Da	ıte:	-	R	tun Start Stop		R1*
	QC:		Date:	SPC (Y/N):	Da	ite:			жор	*N	R2*
Sequence ID/ Work Center I	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120		QC8- Inspect parts - secon	nd check	0.00	3-1-	12		2.1	4		ૺ ૽ૣૺૄૢૢૢૢૢૢ૽૾
120 QC Quality Control		Memo		0.00				24			
125				0.00				21/	, F	JE, 2	1.01
125 Skidtubes		Memo		0.00				$\alpha 9$	8	10-0	
Skidtubes		Clean spacer Batch:	s with Ultra Aluminum	n Cleaner							
130		Identify as per dwg & Sto	ock Location: <u>L</u>	0.00				24		BE	
130 Packaging		Memo		0.00				24	0	13-0	01-31
Packaging		iviemo									

												DQA:	Da	te:	Ł
NCR:	Yes	/ No				WORK ORDER NON-C	O	NFORM	MANCE / UP	DATE					
												QA Closed:	Da	te:	
Work Ord	er.					DISPOSITION				AGAINST	DE	PARTMENT	PROCESS		
Work ord	 .					Rework	1		Skid-tube	Crosstube		1	Water Jet		Engineering
Part	No.					Scrap			Machining	Small Fab		Pro	d. Eng. Coor.	Н	Quality
						Use-as-is			noforming	Finishing		4	e/Packaging		Other
NCR	No.					Work Order Update			Large Fab	Composite			Supplier		
			,												
Root					1	ption of work order update	1	Initial		ction		Sign &			
Cause		Date	Step	Qty	(or Non-conformance	Ch	nief Eng	Desc	ription		Date	Verificatio	n	QC Inspector
Doc/Data							l							_ [
Equip/Tooling															
Operator							İ								
Material															
Setup														- 1	
Other															•
Process															
Supplier					ļ										
Training															
Unapproved															
						F	AUL	T CATE	GORY						
Landi	ng (ear				General		_							
		Bending				Bend		Grain				Ovalized			Pressure/Forced
		Centre No	ot Concer	ntric to	o/s	BOM/Route		Hardwa	re			Over/Under	tolerance		Temperature/Cure
		Cracks				Broken/Damaged		Inspecti	on Incomplete			Part Incorred	:t		Weld
		Crushed/0	Crimped.			Burrs		Instruct	ions Incomplete	/Unclear		Part Lost/Mi	ssing		Wrong Stock Pulled
		Cuffs				Contamination		Mainte	nance			Part Moved			

Mislabeled

Out of Calibration

Out of Sequence

Outside Dimensions

Misread

Offset

Positioned Wrong

Power Loss/Surge

Other

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Heat Treat

Inspection Strip in Tube

Torque Waves in Extrusion

Countersink

Cut Too Short

Drill Holes

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

W	ork	Order	ID	94653
---	-----	-------	----	-------

94653

Page 3

December-19-1	2 1:52:19 P	M		94();).J							
Item ID: Revision ID:	D3903-1		, Marie 1 m. 12	Accept	*N900	040	100)* s	-	Start Stop	14.	S1*
Item Name:	Spacer									этор	*N:	S2*
Start Date:	12/14/12	Start Qty: 24.00	*24*		Cust Item I	D:						
Required Date	: 1/11/13	Req'd Qty: 24.00	*24*		Customer:							
Reference:												
Approvals:	Process P	lan:	Date:	Tooling:	D:	ate:		F	Run	Start	*N	R1*
	QC:		Date:	SPC (Y/N):	D:	ate:				Stop	*N	R2*
Sequence ID/ Work Center l	I D	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reje Qty		Reject Number	Insp. Stamp
140		QC21- Final Inspection -	Work Order Release	0.00						1	- 1	\mathcal{A}
140 QC Quality Control		Мето		0.00						7	1/31	

pe 13-07-37

												DQA:	Date	-13
NCR:	Yes	/ No					WORK ORDER NON-C	100	VFORM	MANCE / UPDATE			_	,
												QA Closed:	Date	:
Nork Ord	er:						DISPOSITION			AGAIN	ST DE	PARTMENT	PROCESS	
Part NCR	No.						Rework Scrap Use-as-is Work Order Update		Thern	Skid-tube Crosstu Machining Small F noforming Finishi Large Fab Composi	ab ng	-	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root					Des	crip	otion of work order update	ı	nitial	Action		Sign &		
Cause		Date	Step	Qty		C	or Non-conformance	Ch	ief Eng	Description		Date	Verification	QC Inspector
oc/Data quip/Tooling perator laterial etup ther rocess upplier raining napproved														
							F	AUL	T CATE	GORY		•,		1
Land	ng (Gear					General							
		Bending Centre No Cracks Crushed/C Cuffs Heat Trea Inspectior	Crimped. t		D/S		Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short		1	on Incomplete ions Incomplete/Unclear nance iled		Ovalized Over/Under Part Incorred Part Lost/Mi Part Moved Positioned V Power Loss/	ct issing Vrong	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other
		Ripples in	Bend				Drill Holes		Offset					
		Torque W	aves in E	xtrusion	1		Drawing		Out of 0	Calibration				
		Turning Se	equence				Finish		Out of 9	Sequence				

Outside Dimensions

Wave/Twist in Tube

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Picklist Print

December-19-12 1:52:19 PM

Work Order ID:

94653

Parent Item:

D3903-1

Parent Item Name:

Spacer

Start Date: 12/14/12

Required Date: 1/11/13

Page 1

Start Qty: 24.00

Required Qty: 24.00

Comments:

IPP RevA: New issue DD verified by:EC

Comments:	IPP RevA: New iss	ue DD verified by	EC										
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6T0.375W.058 6061-T6 RD Tube .375 x.	058W	Purchased	No			100	f	457.9330	0.345 8.	8.7157896 344		H13-	01-22
				Location		Loc Qty	<u>Lo</u>	c Code					
				MAT014		457.933							
				116920)	1.156							
				119081	7	0.11							
				123303	3	8							
				123449	•	252							
				12384	4	196.667							
				-> 1240	69				8.8	344			

NCR:	Yes	/ No				WORK ORDER NON-O	COL	NFOR	MANCE / UP	DATE				
											QA Close	ed:	Date:	
Work Ord	er:					DISPOSITION				AGAINST D	EPARTME	NT/P	PROCESS	
Part I	No.					Rework Scrap Use-as-is Work Order Update		i	Skid-tube Machining noforming Large Fab	Crosstube Small Fab Finishing Composite			Water Jet Eng. Coor. /Packaging Supplier	Engineering Quality Other
Root					Descri	ption of work order update		nitial	Ac	tion	Sign &			
Cause		Date	Step	Qty	(or Non-conformance	Ch	ief Eng	Desc	ription	Date		Verification	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved														
							AUL	T CATE	GORY					
Landi		I				General		1		-	٦		Γ	7
	$\overline{}$	Bending	. 6		_ -	Bend	<u> </u>	Grain		-	Ovalized		<u> </u>	Pressure/Forced
1	1	Centre N	ot Concer	ntric to	U/S	BOM/Route	1	Hardwa	ire	i	Over/Und	der to	olerance	Temperature/Cure

Inspection Incomplete

Maintenance

Out of Calibration

Out of Sequence

Outside Dimensions

Mislabeled

Misread

Offset

Instructions Incomplete/Unclear

Broken/Damaged

Contamination

Countersink

Cut Too Short

Drill Holes

Drawing

Finish

Folio

Burrs

DQA:

Part Incorrect

Part Moved

Part Lost/Missing

Positioned Wrong

Power Loss/Surge

Date:

Weld

Other

Wrong Stock Pulled

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Cracks

Cuffs

Heat Treat

Crushed/Crimped.

Inspection Strip in Tube

Torque Waves in Extrusion

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

DART AEROSPACE LTD	Work Order:	94653
Description: Spacer	Part Number:	D3903-1
Inspection Dwg: D3903 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

	X	First Article		Prototyp	e
Drawing	Talaranaa	Actual	Accent	Paiact	Method

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.375	+0.006/-0.001	.375			1308	Vein
					13700	
Ø0.259	+0.006/-0.001	. 241				
4.080	+0.030/-0.000	.241 4.095	V			
0.030 x 45°	+/-0.010 x 0.5°	.035x45°			<u> </u>	
			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			

		-				
						•
						•
						s weeks

	01		DAC		
Measured by:	\$	Audited by:	\ <u>Q</u> <u> </u>	Prototype Approval:	N/A
Date:	13-01-22	Date:	13-1-27	Date:	N/A

Rev	Date	Change	Revis	₩-	by	Approved
Α	09.10.01	New Issue	KJ S	7		

8 94653 pl12-21-12 D 4.080+0.030 B2-1 Ø0.375 DETAIL A REF С С Ø0.259 REF -0.030 x 45* CHAMFER TYP DETAIL A C3-1 **D3903-1 SPACER** CORRECT TYPO Ø0.375 WAS Ø0.313 (ZN A6-1) 09.06.30 Α NEW ISSUE RF 09.03.30 NOTES:
1) MATERIAL: 6061-T6 OR 6061-T62 ALUMINUM SEAMLESS TUBING 0.375" OD x 0.058" WALL PER WW-T-700/6 OR AMS 4080 OR AMS 4082 OR QQ-A-220/8 OR QQ-A-225/8 OR ASTM B210 OR ASTM B241 (REF DART SPEC. M6061T0.313W.058) REV. DESCRIPTION BY DATE DART AEROSPACE USA, INC. PORT HADLOCK, WA DESIGN RF DRAWN RF OR ASTM B210 OR ASTM B241 (REF DART SPEC. M60
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.02 lbs DRAWING NO. CHECKED REV. B D3903 MFG. APPR. SHEET 1 OF 1 TITLE APPROVED SCALE **SPACER** COPYRIGHT © 2005 BY DART AEROSPACE USA, INC.
THIS GOODWINE IS PRIVATE AND CONTROL THE DIS BURNLED ON THE CEMENTS AND THE COMMITTED THE COMMITTED COMMITTED THE COMMITTED COMMITT DE APPR. NTS DATE 09.06.30